

Lanzar®

OPTISCION

A M E R I C A N C R A F T E D P E R F O R M A N C E



OPTS250.2  
OPTS350.2  
OPTS520.2  
OPTS750.2  
OPTS150.4  
OPTS300.4  
OPTS600.4  
OPTS650.5

Owner's Manual OPTISCION

*Lanzar*

*Lanzar* OPTISCION OWNER'S MANUAL

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# OPTISCION

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## **INTRODUCTION**

Congratulations on your purchase of a Lanza OPTISCION amplifier. You have purchased a quality product designed and engineered to give you many years of uncompromised musical service. OPTISCION amplifiers are designed with the latest technology available, incorporating a DC to DC Switching Power Supply, which provides headroom for even the most demanding peaks and dynamic ranges found on modern CD's and recordings.

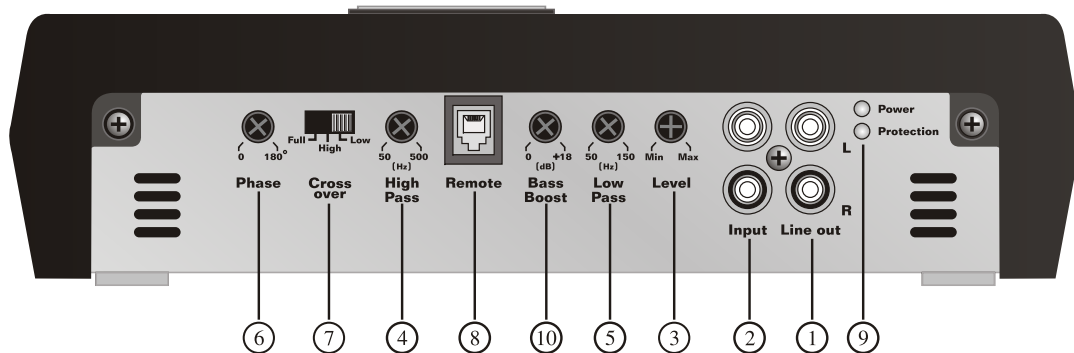
### **Features**

- High Technology SMD Circuit
- MOSFET switches maintain rated power over a wide range of battery voltages
- PWM(Pulse-Width-Modulated) System.
- 2 Ohm Stable Stereo operation
- Stereo, Bridge Mode and Tri-Mode System Application Compatible
- Variable input level controls for each pair of channels
- Variable high and low pass crossover controls
- Thermal and speaker short protection circuitry
- Power and Protection LED indicators
- Bass Boost Circuitry
- Nickel plated power, RCA and speaker connectors
- High-efficiency, heavy aluminum heatsink
- Bass Boost Remote control

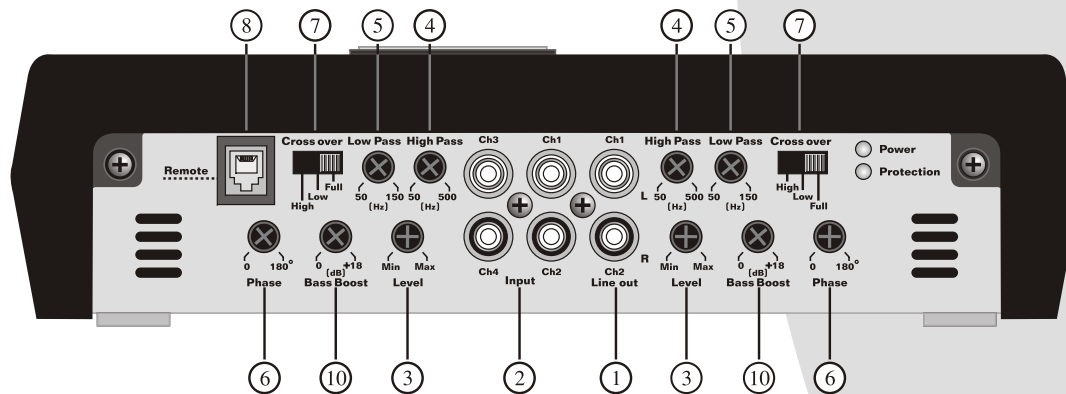
# FEATURES AND CONTROLS

## OPTISCION

### OPTS250.2/350.2/520.2/750.2

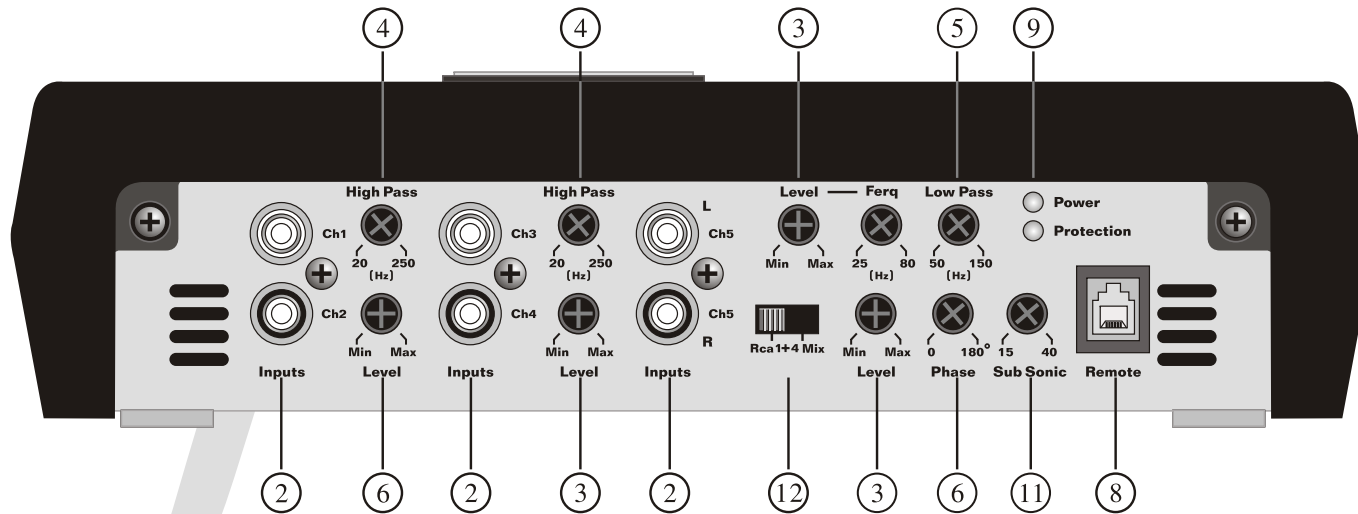


### OPTS150.4/300.4/600.4



## FEATURES AND CONTROLS

OPTS650.5



Lanza

## FEATURES AND CONTROLS

# OPTISCION

**1. Line Out RCA Jacks** - The LINE OUT allows you to build multiple amplifier systems with out having to use splitter cords to distribute the signal. Now it is simple a matter of bringing one set of RCA into the first amplifier, then using the line out RCA jacks as the feed to the next amplifier.

**2. Input RCA Jacks** - These inputs are for signal cables from the source. Always use high quality shielded RCA cables.

**3. Level Control** - Enables the matching of input levels to the output levels from the head unit(or other signal source).

**4. Variable High Pass Filter** - 50Hz~500Hz

**5. Variable Low Pass Filter** - When Crossover Mode Selector is in Low Pass Mode, this control limits the frequencies which will be distributed to the speakers to those below the value to which this is set within the range 50~150Hz

**6. Phase Shift control** - Allows you to change the phase of your subwoofer from 0 to 180 degrees to help compensate for timing differences between drivers.

**7. Cross Over**

**8. Bass Boost Remote Control Input**

**9. Power & Protection Indicators** - Provide instant information on status of amplifier, including short-circuit and thermal overload alerts.

**10. Variable Bass Boost Control** - 0~18dB

**11. Variable Subsonic Filter** - 15Hz~40Hz

**12. Switch Mode** - 1-4CH: When signal is put into RCA input of CH 1/2/3/4, 5CH Operates, RCA: When signal is put into RCA input of CH 1/2/3/4/5, 5CH operates

## SPECIFICATIONS

<b>MODEL</b>	<b>OPTS250.2</b>	<b>OPTS350.2</b>	<b>OPTS520.2</b>	<b>OPTS750.2</b>
<b>RMS Power, INTO 4 Ohms</b>	2 X 120 W	2 X 160 W	2 X 210 W	2 X 320 W
<b>MAX Power, INTO 4 Ohms</b>	2 X 450 W	2 X 600 W	2 X 800 W	2 X 1200 W
<b>MAX Power, INTO 4 Ohms Bridged</b>	1 X 900W	1 X 1200 W	1 X 1600 W	1 X 2400 W
<b>RMS Power, Bridged INTO 4 Ohm</b>	1 X 300 W	1 X 400 W	1 X 550 W	1 X 800 W
<b>THD at 1 Watt, 4 Ohm</b>	0.5%	0.5%	0.5%	0.5%
<b>Signal-to-Noise Ratio, below rated power output</b>	90dB	90dB	90dB	90dB
<b>Frequency Response, at 1 Watt, 4 Ohm</b>	10Hz to 35kHz	10Hz to 35kHz	10Hz to 35kHz	10Hz to 35kHz
<b>Damping Factor at 20Hz, 4 Ohm</b>	200	200	200	200
<b>Low Pass Filter(24dB/Octave)</b>	50Hz~150Hz	50Hz~150Hz	50Hz~150Hz	50Hz~150Hz
<b>High Pass Filter(24dB/Octave)</b>	50Hz~500Hz	50Hz~500Hz	50Hz~500Hz	50Hz~500Hz
<b>Variable Bass Boost Control</b>	0~ +18dB	0~ +18dB	0~ +18dB	0~ +18dB
<b>Phase Shift Control</b>	0°to 180°	0°to 180°	0°to 180°	0°to 180°
<b>Input Sensitivity</b>	200mV to 8V	200mV to 8V	200mV to 8V	200mV to 8V
<b>Input Impedance</b>	40K Ohm	40K Ohm	40K Ohm	40K Ohm
<b>Line Output Impedance</b>	100 Ohm	100 Ohm	100 Ohm	100 Ohm
<b>Dimensions(Inches)</b>	9.41" x 2.36" x 10.24"	9.41" x 2.36" x 12.01"	9.41" x 2.36" x 13.78"	9.41" x 2.36" x 15.79"
<b>Fuse Rating</b>	25A x 2	30A x 2	35A x 2	30A x 3



## SPECIFICATIONS

# OPTISCION

<b>MODEL</b>	<b>OPTS150.4</b>	<b>OPTS300.4</b>	<b>OPTS600.4</b>	<b>OPTS650.5</b>
<b>RMS Power, INTO 4 Ohms</b>	4 X 75 W	4 X 150W	4 X 200 W	4 X 75 W + 1 x 160W
<b>MAX Power, INTO 4 Ohms</b>	4 X 250 W	4 X 400 W	4 X 525 W	4 X 180 W + 1 x 320W
<b>MAX Power, INTO 4 Ohms Bridged</b>	2 X 500 W	2 X 800W	2 X 1050 W	2 X 260 W + 1 x 640W
<b>RMS Power, INTO 2 Ohms Stereo</b>	4 X 125 W	4 X 250 W	4 X 300 W	4 X 120 W + 1 x 320W
<b>THD at 1 Watt, 4 Ohm</b>	0.5%	0.5%	0.5%	0.5%
<b>Signal-to-Noise Ratio, below rated power output</b>	90dB	90dB	90dB	90dB
<b>Frequency Response, at 1 Watt, 4 Ohm</b>	10Hz to 35kHz	10Hz to 35kHz	10Hz to 35kHz	10Hz to 35kHz
<b>Damping Factor at 20Hz, 4 Ohm</b>	200	200	200	200
<b>Low Pass Filter(24dB/Octave)</b>	50Hz~150Hz	50Hz~150Hz	50Hz~150Hz	(5CH)50Hz~150Hz
<b>High Pass Filter(24dB/Octave)</b>	50Hz~500Hz	50Hz~500Hz	50Hz~500Hz	(1-4CH)20Hz~250Hz (5CH)15Hz ~40Hz
<b>Variable Bass Boost Control</b>	0~ +18dB	0~ +18dB	0~ +18dB	0~ +18dB
<b>Phase Shift Control</b>	0°to 180°	0°to 180°	0°to 180°	0°to 180°
<b>Input Sensitivity</b>	200mV to 8V	200mV to 8V	200mV to 8V	200mV to 8V
<b>Input Impedance</b>	40K Ohm	40K Ohm	40K Ohm	40K Ohm
<b>Line Output Impedance</b>	100 Ohm	100 Ohm	100 Ohm	100 Ohm
<b>Dimensions(Inches)</b>	9.41" x 2.36" x 12.60"	9.41" x 2.36" x 14.17"	9.41" x 2.36" x 15.79"	9.41" x 2.36" x 18.54"
<b>Fuse Rating</b>	25A x 2	40A x 2	40A x 3	40A x 2

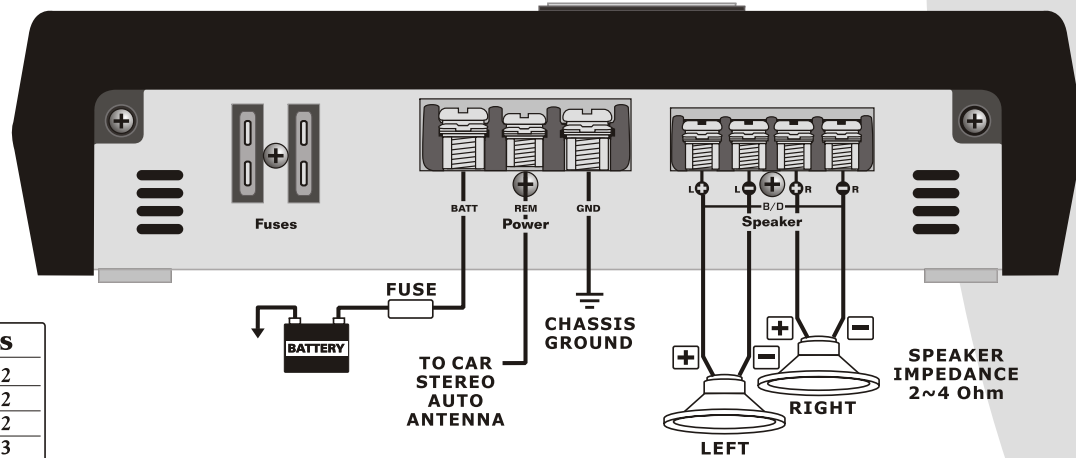
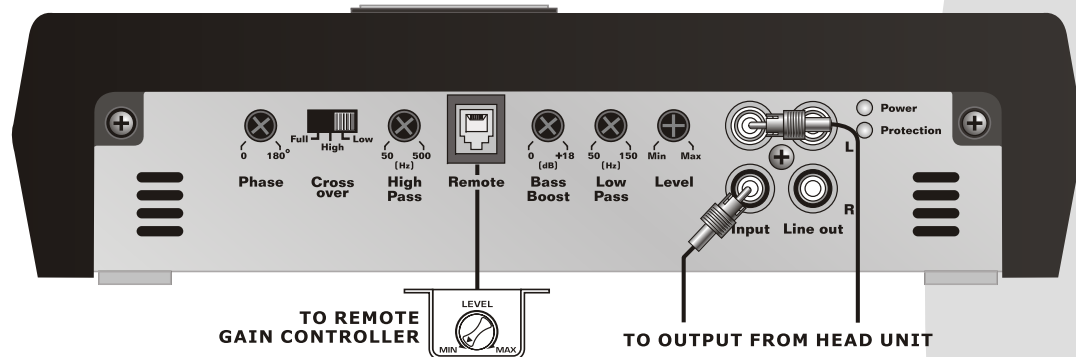
## **AMPLIFIER INSTALLATION**

1. Find a suitable location in the vehicle to mount the amplifier.
2. Make sure there is sufficient air flow around the intended mounting location.
3. Bolt the amplifier to the mounting surface.
4. Connect the power ground terminal to the nearest point on the chassis of the car. Keep this ground wire less than one meter (39") in length. Use 4 gauge wire.
5. Connect the remote terminal to the remote output of the head unit using 14 gauge.
6. Connect an empty fuse holder within 300mm (12") of the battery and 4 gauge or larger high quality cable from this fuse to the amplifier location.
7. Make sure there is no fuse in this fuse holder. Then make the connection to the "BATT" connection on the amplifier.
8. If multiple amplifiers are being used, use cables (each with its own fuse at the battery) or a #0 or a #2 cable from the fuse holder at the battery to a distribution block at or near the amplifier's location.
9. Connect all line inputs and outputs using high-quality RCA-RCA cables.
10. Insert fuse(s) at the battery fuse holder(s).
11. Recheck all connections before powering up.
12. Set all level controls to their least sensitive positions and set all crossover controls, switches, etc. to the desired frequency or position.
13. Once the system is powered up, set the volume control on the head unit to about the 2 o'clock position, and then set all the amplifiers' level controls for maximum output level.
14. Further fine tuning of the various controls may be necessary to obtain the desired results.

# SYSTEM WIRING

## 2 CHANNEL STEREO CONFIGURATION

OPTS250.2/350.2/520.2/750.2

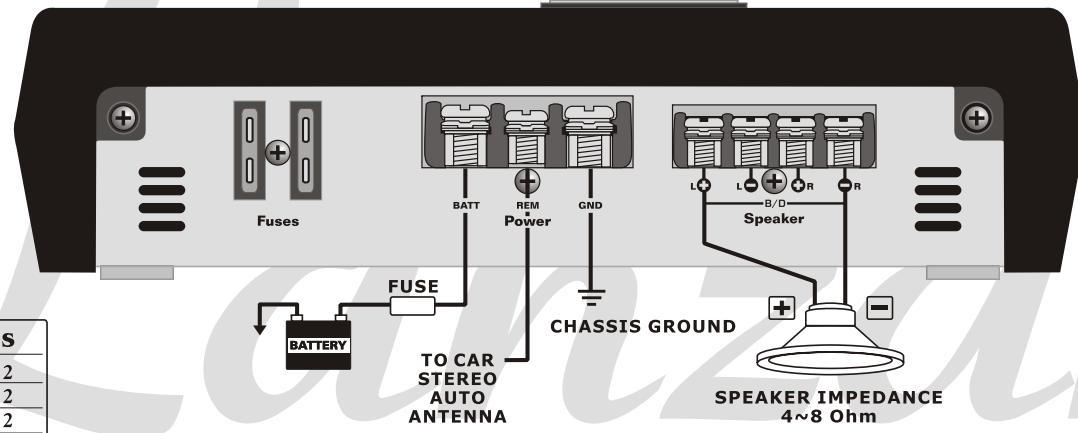
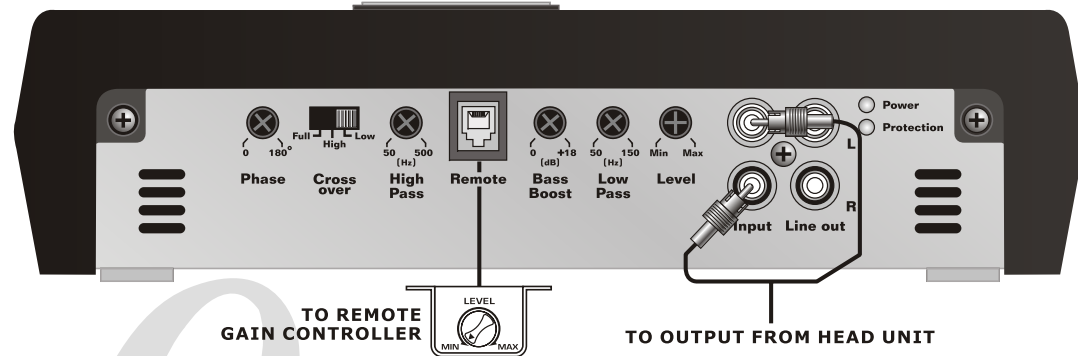


MODEL	FUSES
OPTS 250.2	25A x 2
OPTS 350.2	30A x 2
OPTS 520.2	35A x 2
OPTS 750.2	30A x 3

# SYSTEM WIRING

## 2 CHANNEL BRIDGED MODE CONFIGURATION

OPTS250.2/350.2/520.2/750.2

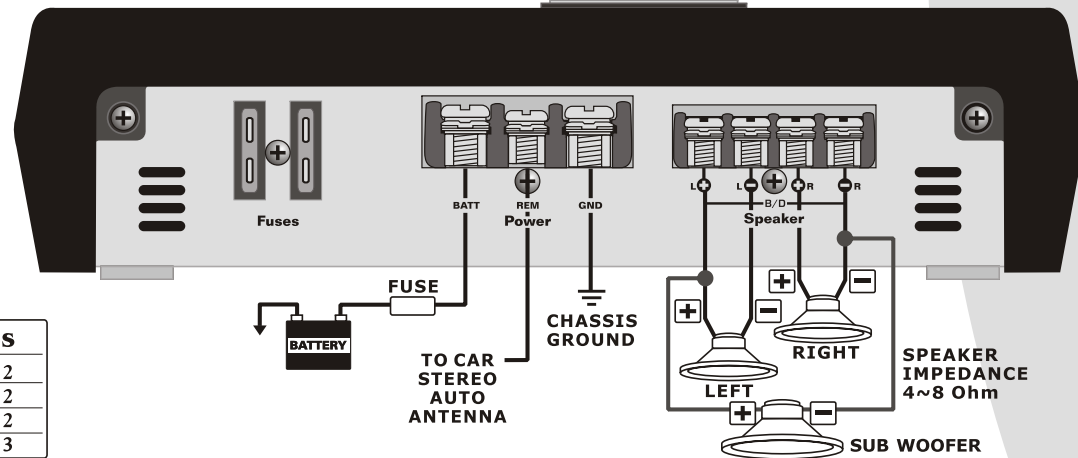
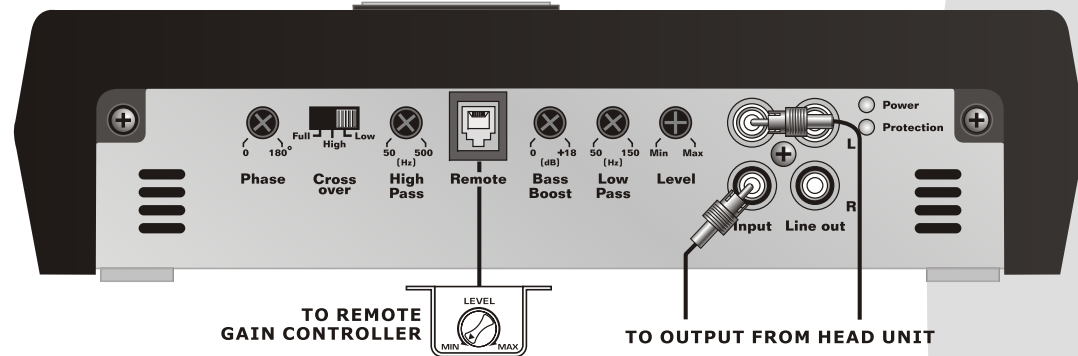


MODEL	FUSES
OPTS 250.2	25A x 2
OPTS 350.2	30A x 2
OPTS 520.2	35A x 2
OPTS 750.2	30A x 3

# SYSTEM WIRING

## 2 CHANNEL TRI-MODE CONFIGURATION

OPTS250.2/350.2/520.2/750.2

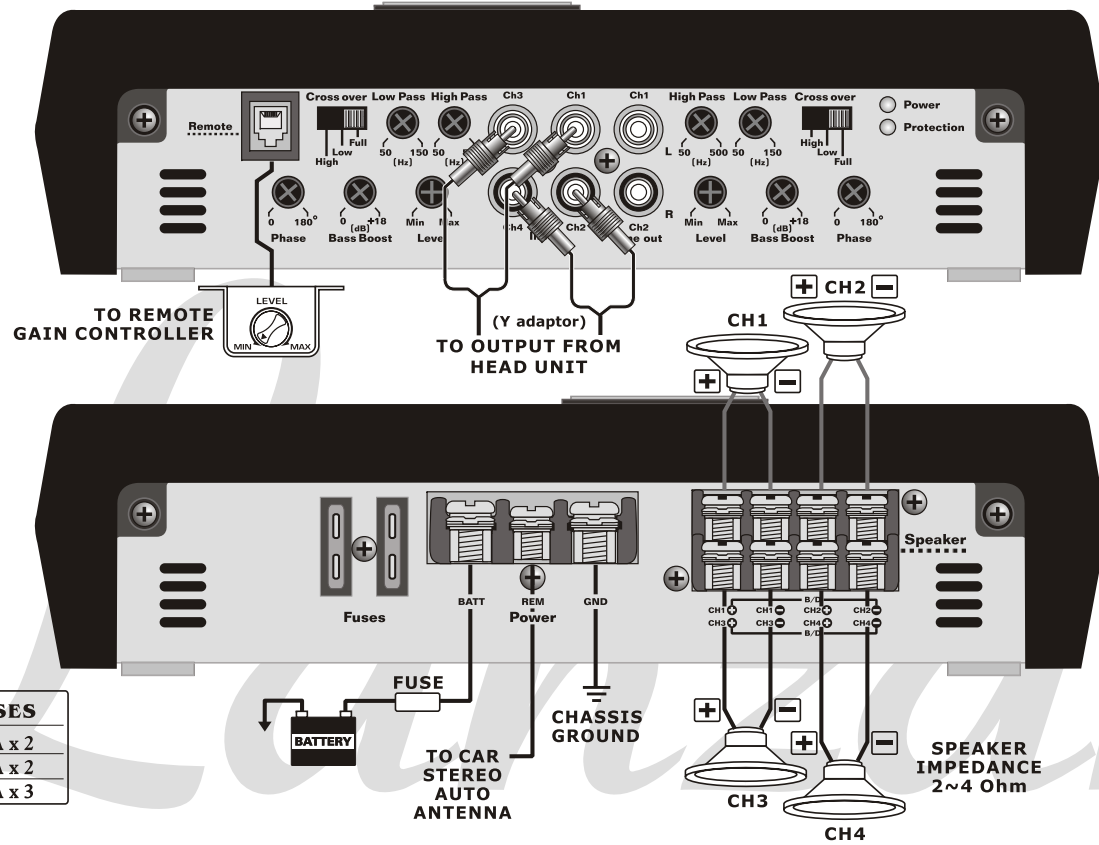


MODEL	FUSES
OPTS 250.2	25A x 2
OPTS 350.2	30A x 2
OPTS 520.2	35A x 2
OPTS 750.2	30A x 3

# SYSTEM WIRING

## 4 CHANNEL STEREO CONFIGURATION

OPTS150.4/300.4/600.4

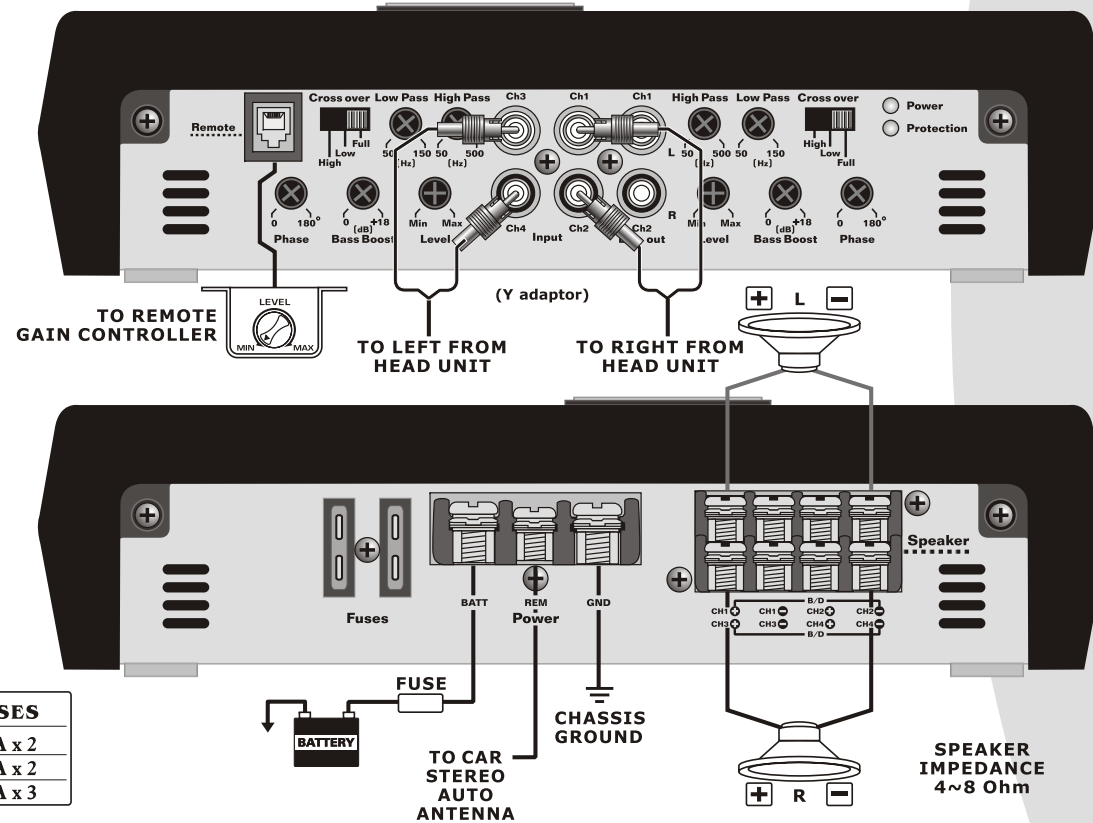


MODEL	FUSES
OPTS 150.4	25A x 2
OPTS 300.4	40A x 2
OPTS 600.4	40A x 3

# SYSTEM WIRING

## 4 CHANNEL BRIDGED MODE CONFIGURATION

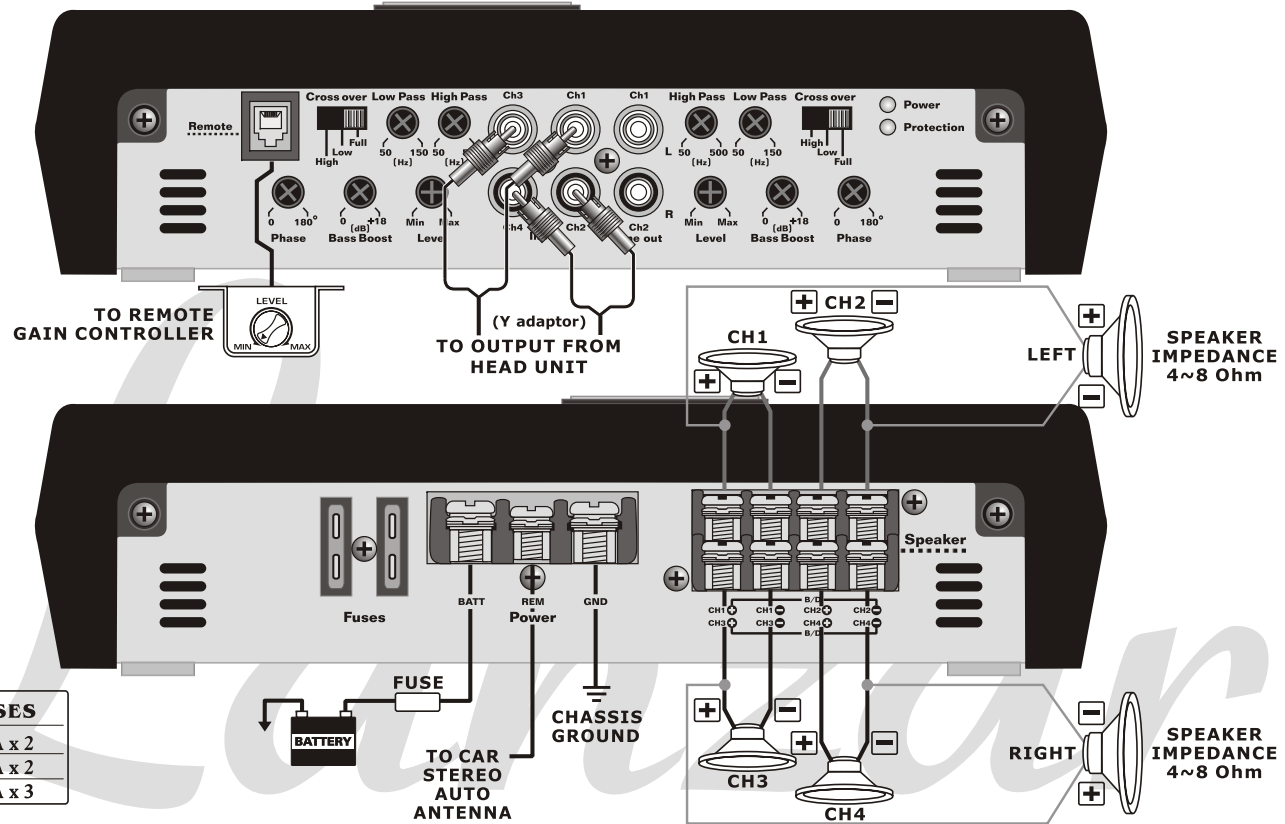
OPTS150.4/300.4/600.4



# SYSTEM WIRING

## 4 CHANNEL TRI-MODE CONFIGURATION

OPTS150.4/300.4/600.4



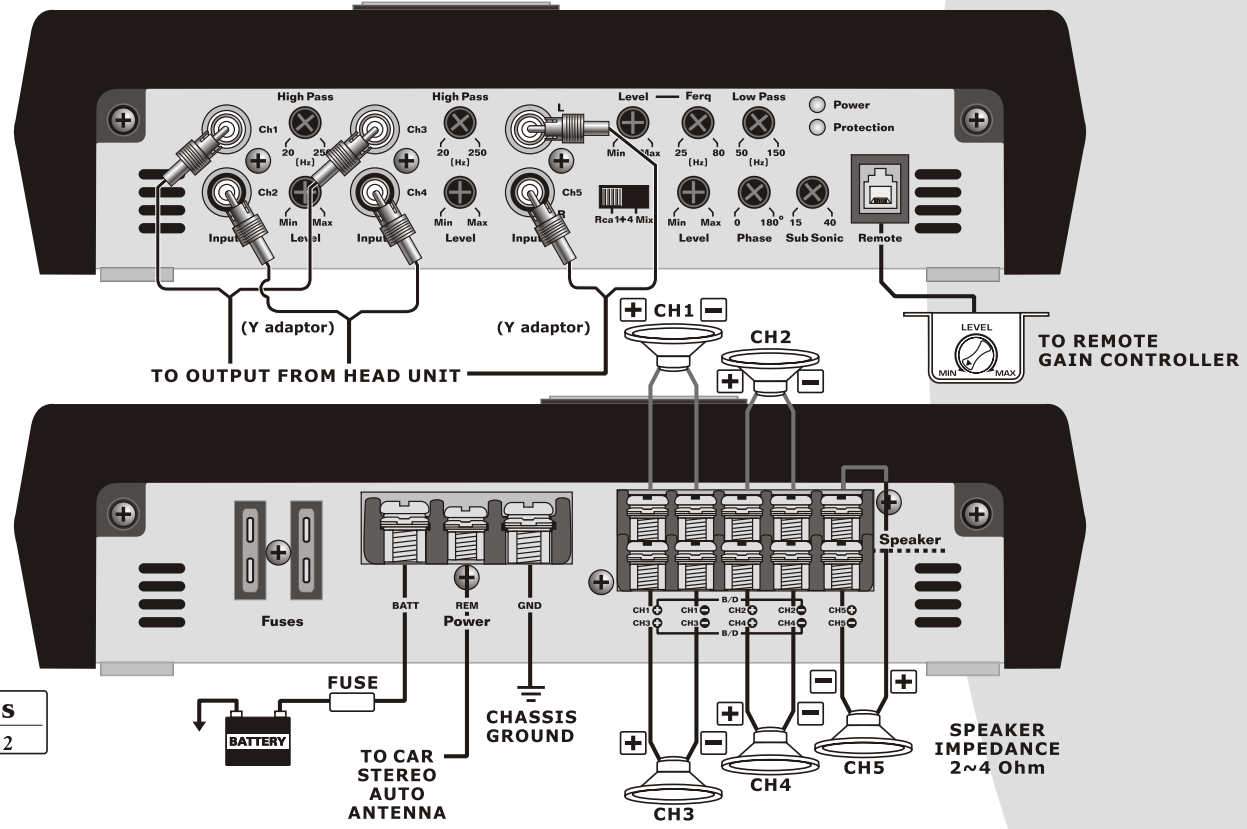
MODEL	FUSES
OPTS 150.4	25A x 2
OPTS 300.4	40A x 2
OPTS 600.4	40A x 3



# SYSTEM WIRING

## 5 CHANNEL STEREO CONFIGURATION

OPTS650.5

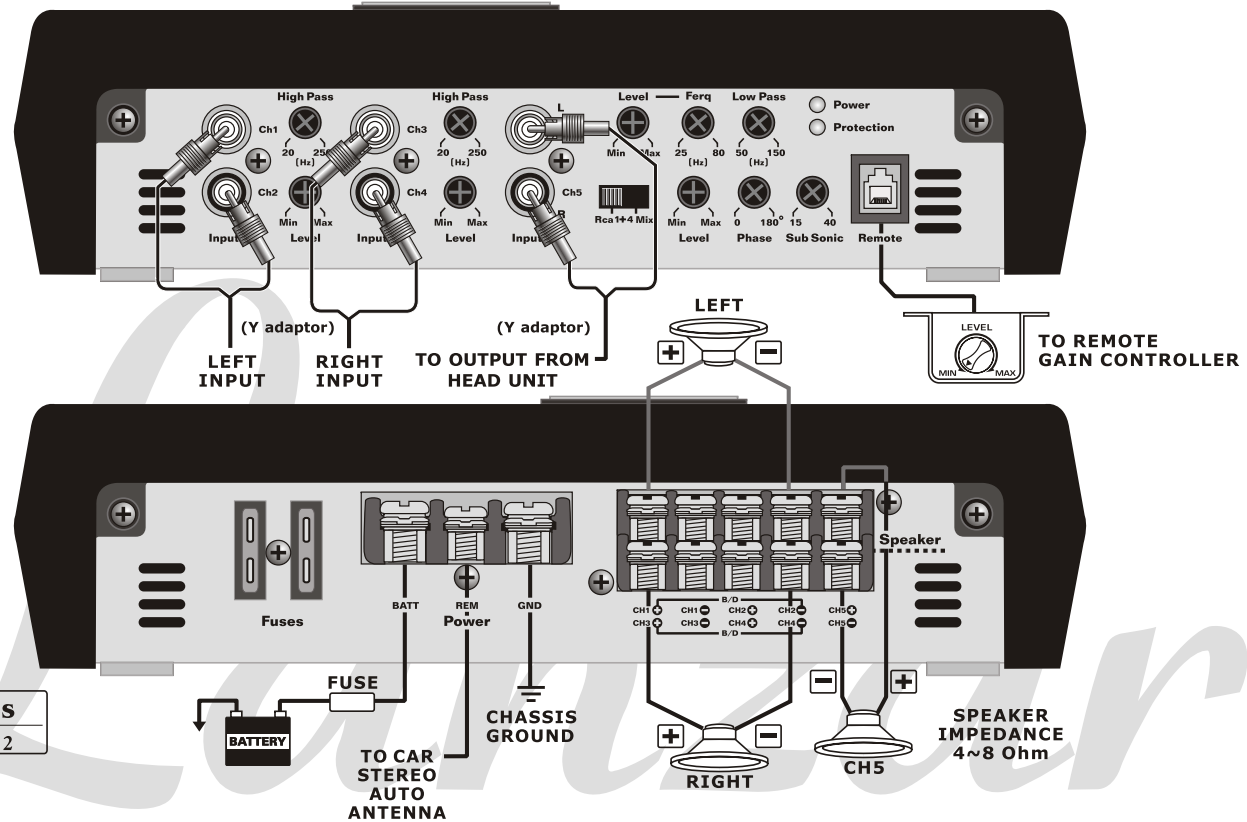


MODEL	FUSES
OPTS 650.5	40A x 2

# SYSTEM WIRING

## 5 CHANNEL BRIDGED MODE CONFIGURATION

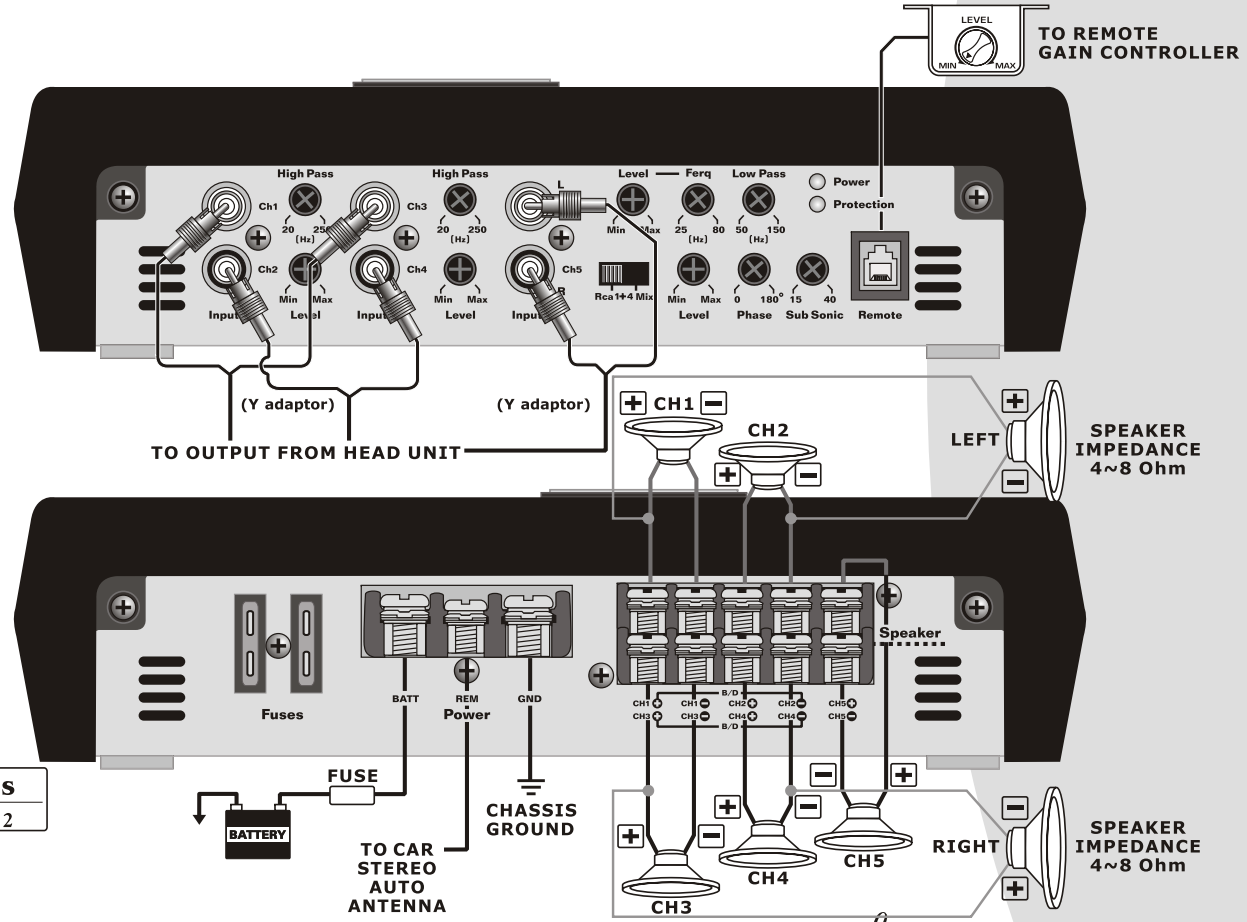
OPTS650.5



OPTS650.5

# SYSTEM WIRING

## 5 CHANNEL TRI-MODE CONFIGURATION



## **TROUBLESHOOTING**

Before removing your amplifier, refer to the list below and follow the suggested procedures. Always test the speakers and their wires first.

### **AMPLIFIER WILL NOT POWER UP.**

Check for good ground connection.

Check that remote DC terminal has at least 13.8V DC.

Check that there is battery power on the +terminal.

Check all fuses.

Check that Protection LED is not lit. If it is lit, shut off amplifier briefly and then repower it.

### **HIGH HISS OR ENGINE NOISE (ALTERNATOR WHINE) IN SPEAKERS.**

Disconnect all RCA inputs to the amplifier(s)-if hiss / noise disappears, then plug in the component driving the amplifier and unplug its inputs. If hiss / noise disappears, go on until the faulty / noisy component is found.

It is best to set the amplifier's input level as insensitive as possible. The best subjective S/N ratio is obtainable this way. Try to drive as high a signal level from the head unit as possible.

## OPTISCION

### **PROTECTION LED COMES ON WHEN THE AMPLIFIER IS POWERED UP.**

**Check for shorts on speaker leads.**

**Check that the volume control on the head unit is turned down low.**

**Remove speaker leads, and reset the amplifier. If the Protection LED still comes on, then the amplifier is faulty.**

### **AMPLIFIER(S) GETS VERY HOT.**

**Check that the minimum speaker impedance for that model is correct.**

**Check for speaker shorts.**

**Check that there is good airflow around the amplifier. In some applications, an external cooling fan may be required.**

### **DISTORTED SOUND**

**Check that the Level control(s) is set to match the signal level of the head unit.**

**Check that all crossover frequencies have been properly set.**

**Check for shorts on the speaker leads.**

### **HIGH SQUEAL NOISE FROM SPEAKERS.**

**This is always caused by a poorly-grounded RCA patch cord.**

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